

## **Abstract**

The present invention provides a comminuting device that can generate an impact speed exceeding 200 ft/s, for example 1,500 ft/s, while consuming less energy than conventional comminuting devices, and thus, is more efficient than conventional comminuting devices. The comminuting device comprises a throwing wheel that generates a centrifugal and tangential force in the particles of material to accelerate the particles toward a desired impact speed, an impact rotor that includes an impact surface to fragment the particles when the particles collide with the impact surface, and a motor operable to power the impact rotor and the throwing wheel. To increase the impact speed of the particle, the impact surface is moved toward the particle as the particle exits the throwing wheel. Thus, the comminuting device can generate impact speeds that exceed the impact speeds generated by conventional comminuting devices and consequently fracture a particle into smaller pieces after one run.